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ABSTRACT

This discussion of the laser videodisk begins by noting that it is an extremely high density visual storage medium that can supply instructors with vast visual warehouses to supplement instruction, whether through conventional group presentations or via individualized computer assisted instruction. Major features of the medium are then described with an emphasis on: (1) its cost-effectiveness; (2) its capacity for easy random access to information; (3) its capacity to handle motion video in slow, normal, and fast modes; (4) its capacity to utilize two audio tracks for high quality stereo music reproduction, dual language narration, or two different instructional tracks; (5) its durability as compared to conventional media; and (6) its ability to complement computer assisted instruction. Projected future applications of the medium are outlined. (9 references) (GL)

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The Videodisc: A Multi-Purpose Instructional Tool

by

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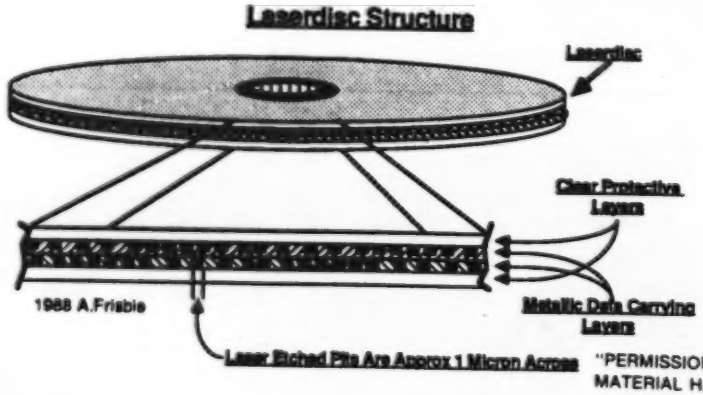
The laser videodisc can supply instructors with vast visual warehouses to supplement instruction - whether through conventional group presentations or via individualized computer assisted instruction. The Videodisc is an extremely high density visual storage medium-up to 54,000 individual video frames on each side of a disk, combined with the capability of very high quality visual reproduction made possible by laser optics.The high density and extremely good visual quality of the videodisc is enhanced even more by low cost, durability, and the capacity for easy random access.

A comparison of the videodisc with conventional audiovisual media leaves no doubt as to it's cost effectiveness. A typical videodisc, which might sell for $100 may contain about 2,000 still visuals (some videodiscs have many more) and 25 minutes of good motion video. This compares with a 25 minute commercial videotape program which might cost about $300 and 2,000 35mm slides that would cost at least $1 each-another $2,000. Add to this the cost of 25 slide trays, which cost about $6 each, to house the slides and we have another $150. It is easy to see that the $100 videodisc compares very favorably with a price of at least $2,450 for the same amount of material in videotape and 35mm slide form. Videodisc players also compare very favorably with other audiovisual devices. Typical videodisc players sell for about $600 to $1,200. This is similar to the cost of videocassette players, but we would also need a slide projector and screen to use 35mm slides-perhaps another $1,000. Cost is only one factor favoring the videodisc medium. Let's next consider the utility of the medium.

The videodisc medium can present slides in any order almost instantly. Motion video can be played in high quality slow, normal, or fast modes. Still frames are mostly free of the annoying flicker associated with video tape.



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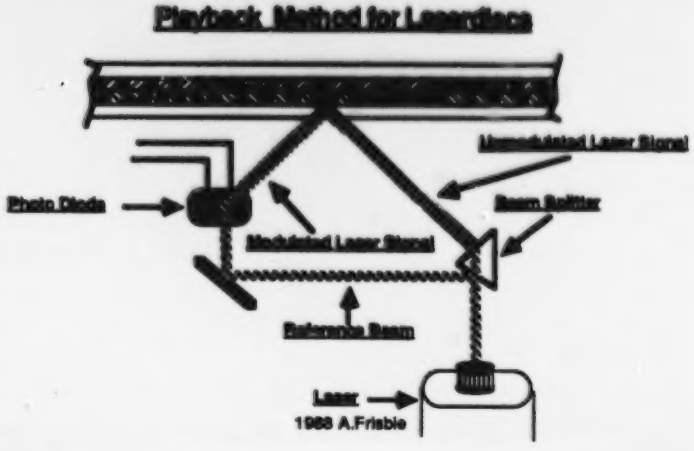
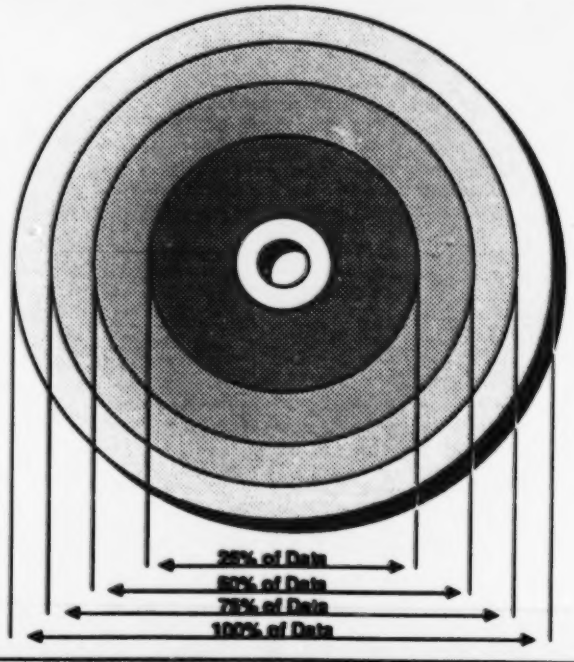
The videodisc's two audio tracks can be used in many ways including high quality stereo music reproduction, dual language narration, or for two different instructional track Videodisc players have proven to be very reliable and user friendly as well.



The control features of videodisc players are similar to those of videocassette players but with the added convience of fast random access to any part of a videodisc via chapter or frame numbers. The videodisc itself is very durable and is not subject to damage by magnetic fields, humidity, dust, or temperature variations as is most conventional media. Consider also the size of a videodisc-about the same as an LP record, which makes it easy to store and transport. The possibility of replacing slide and filmstrip projectors, video-cassette players, and 16mm-projectors, with easy to use,low cost videodisc play-ers to be used for group instruction in the typical classroom is not the only use for the videodisc. The videodisc player is perhaps the ulti-mate computer peripheral.

When coupled with a computer, the videodisc can add a new dimension to computer assisted instruction (CAI). Interactive video CAI may include high quality motion video and thousands of photographic quality still visuals as well. The opportunity to truly harness the power of the computer and video mediums to individualize instruction almost staggers the imagination.

LASERDISC: CAV FORMAT
DATA DENSITY ON CONSTANT ANGULAR VELOCITY DISCS



CAV format (Constant Angular Velocity) discs rotate at a constant speed of 1800 rpm. Data is written to these discs at a steady rate. The effect of this is that the distance between data bits becomes greater as the write laser moves from the center of the disc to the outer edge. This results in a one frame per track recording rate or about 30 minutes per side linear playing time on a 12 inch disc. It is this one frame per track feature that allows the truly interactive aspects of the Videodisc/computer assembly to come into play as well as providing an environment for many special effects. 1988 A.Frisbie

Imagine an environment which allows the user to explore by random associations something as vast as the national gallery of art or the national air and space museum via the computer/video medium. (Videodiscs and computer programs for both examples are currently available.) Also imagine computer controlled simulations on topics such as weather or biological science which allow a learner to answer a series of questions and immediately see the results of his or her decisions on the video screen, then experiment with alternatives and see the changes. These applications are not only possible, they already exist. Various computer interfaces and authoring systems which permit the control of the videodisc player through the computer are now available. Interactive video has been successfully employed in a wide range of applications including military training, business and industry applications, and public school education. While the cost and complexity of these applications has held back the widespread implementation of interactive video CAI, the cost and ease of use of these systems is continuing to drop.

The future of the videodisc is bright. New videodiscs are emerging almost daily. Conference sessions on interactive video applications at major conferences are increasingly popular and articles on videodisc technology are appearing more frequently in professional publications. New and emerging formats of optical technology such as Compact Disc Visual (CDV), Compact Disc Imaging (CDI), and Direct Read After Write (DRAW) promise even more cost effectiveness and convience than the laservision videodisc. Computer applications such as the Macintosh Hypercard and IBM's InfoWindow offer users greater opportunities for combining the data gathering, decision making, and presentation control of the computer with videodisc technology. The videodisc is a medium whose time has come.

For more information on videodisc technology, see the following books and articles:

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